In the Claims:

Please amend the claims as follows:

Please cancel claims 13, 14, 16 and 21, without prejudice to or disclaimer of the subject matter contained therein.

Please amend the remaining claims as follows:

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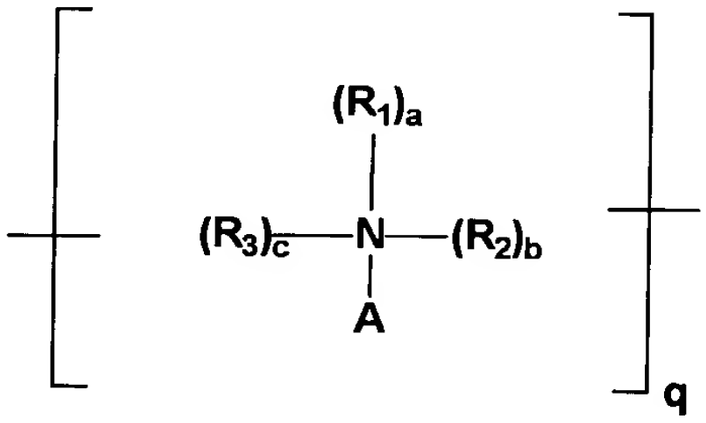
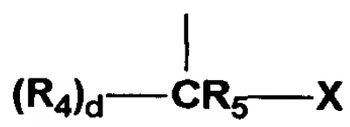
1. (Once amended) A composition for use in synthesizing a nucleic acid molecule, comprising one or more enzymes having nucleic acid polymerase activity and one or more compounds having a chemical formula selected from the group consisting of formula I or formula II, or a salt thereof:

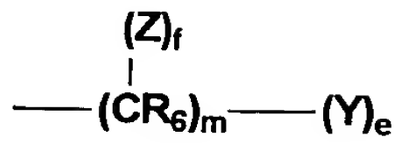
Formula I:

A1



wherein A is 

;

wherein X is  ;

<u>wherein the N is positively charged;</u>

wherein q = 1 to 100,000, wherein when q = 2 to 100,000 each monomer of formula I may be the same as or different from the other monomers of formula I;

wherein Z may be the same as or different from Y;

wherein each Y and Z are independently selected from the group consisting of -OH, $-NH_2$, -SH, $-PO_3H$, $-CO_2H$, $-SO_3H$ and hydrogen;

wherein f is an integer from 0 to 2, m is an integer from 0 to 20 and e is an integer from 0 to 2;

wherein R_4, R_5, and R_6 may be the same or different and are independently selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, amino, mercaptan, thiol, halo, nitro, nitrilo, hydroxy, hydroxyalkyl, hydroxyaryl, phosphato, alkoxy, oxide, ether, ester (alkanoyloxy), carboxy, carbonyl, sulfonyl, sulfonic and amido groups, and d is an integer from 0 to 2;

wherein a, b, and c are independently an integer from 0 to 1, with the proviso that no more than two of a, b, and c are zero;

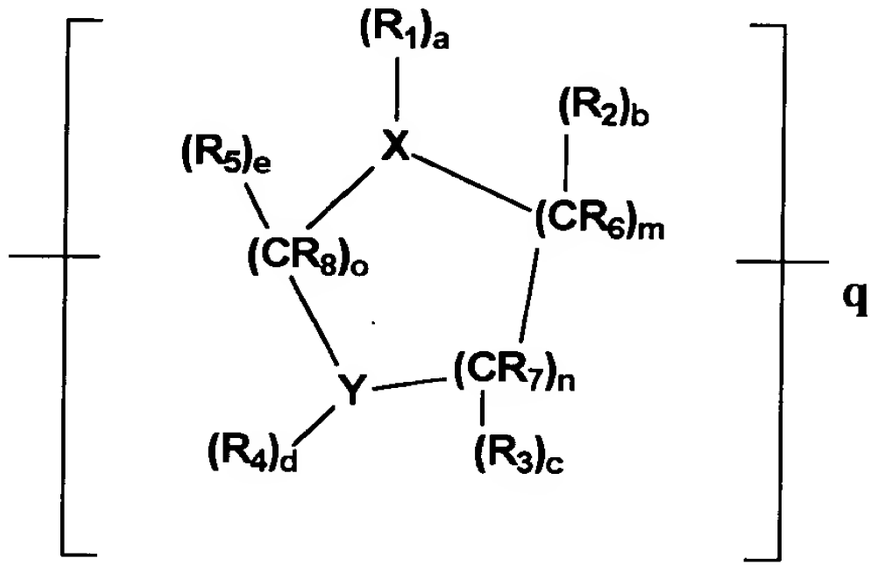
wherein R_1, R_2 and R_3 may be the same or different and are independently selected from the group consisting of:

a) =O; and

b) $(W)_g$
|
$-(CR_7)_n$;

wherein each R_7 and W may be the same or different and are independently selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, amino, thiol, mercaptan, halo, nitro, nitrilo, hydroxy, hydroxyalkyl, hydroxyaryl, phosphato, alkoxy, oxide, ether, ester (alkanoyloxy), carboxy, carbonyl, sulfonyl, sulfonic and amido groups; g is an integer from 0 to 2 and n is an integer from 0 to 20, with the proviso that if two of R_1, R_2 and R_3 are =O, then the other is not =O;

Formula II:



wherein Formula II is saturated or unsaturated;

wherein q = 1 to 100,000, wherein when q = 2 to 100,000, each monomer of formula II may be the same as or different from each other monomer of formula II;

wherein X is selected from the group consisting of N, C, O, P and S;

wherein Y is selected from the group consisting of O, N, S, P, C, -O-NH-, $-O-CH_2-NH-$, $-O-CH_2-O-$, $-NH-CH_2-NH-$, $-O-CH(CH_3)-NH-$, $-NH-CH(CH_3)-NH-$, $-O-CH(CH_3)-O-$, $-NH-C(CH_3)_2-NH-$, -O-S-,

-O-CH_2-S-, -NH-S-, -NH-CH_2-S-, and other mercaptan, phosphato, alkoxy, oxide, ether, esters (alkanoyloxy), carboxy, sulfonyl, sulfonic and amido groups;

wherein R_1, R_2, R_3, R_4, R_5, R_6, R_7 and R_8 may be the same or different and are independently selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, amino, thiol, mercaptan, halo, nitro, nitrilo, hydroxy, hydroxyalkyl, hydroxyaryl, phosphato, alkoxy, oxide, ether, ester (alkanoyloxy), carboxy, sulfonyl, sulfonic and amido groups; and

wherein a, b, c, d, e, m, n, and o are integers which may be the same or different and are independently selected from 0 to 2 for a, b, c, d, and e, and 0 to 5 for m, n, and o.

A1 wts

11. (Once amended) The composition of claim 1, wherein said compound is selected from the group consisting of proline, glycine, 4-hydroxyproline, pipecolic acid, 4-methylmorpholine N-oxide, betaine, carnitine, ectoine, poly(2-ethyl-2-oxazoline) of average molecular weight about 50,000 to about 500,000 daltons, and poly(diallyldimethylammonium chloride) of average molecular weight about 100,000 to about 200,000 daltons.

A2

12. (Once amended) The composition of claim 6, wherein said compound is selected from the group consisting of proline, glycine, 4-hydroxyproline, pipecolic acid, 4-methylmorpholine N-oxide, betaine, carnitine, ectoine, poly(2-ethyl-2-oxazoline) of average molecular weight about 50,000 to about 500,000 daltons, and poly(diallyldimethylammonium chloride) of average molecular weight about 100,000 to about 200,000 daltons.

A3

15. (Once amended) The composition of claim [13,] 1, wherein said enzyme having nucleic acid polymerase activity is selected from the group consisting of a DNA polymerase, an RNA polymerase and a reverse transcriptase.

A4

20. (Once amended) A composition for use in synthesizing a nucleic acid molecule comprising one or more enzymes having nucleic acid polymerase activity and one or more components selected from the group consisting of one or more amino acids, one or more saccharides, one or more polyalcohols, or derivatives thereof, or combinations thereof.

22. (Once amended) A method for synthesizing a nucleic acid molecule, comprising:

A5

(a) mixing a nucleic acid template with one or more of the compositions of [claim1 or 20] claim 1 or claim 20 to form a mixture; and

(b) incubating said mixture under conditions [sufficient to make] whereby a first nucleic acid molecule complementary to all or a portion of said template is made.

23. (Once amended) The method of claim 22, further comprising incubating said first nucleic acid molecule under conditions [sufficient to make] whereby a second nucleic acid molecule complementary to all or a portion of said first nucleic acid molecule is made.

25. (Once amended) A method for amplifying a nucleic acid molecule comprising:

A6

(a) mixing a nucleic acid template with one or more of the compositions of [claims 1 or 20] claim 1 or claim 20 to form a mixture; and

(b) incubating said mixture under conditions [sufficient to amplify] whereby a nucleic acid molecule complementary to all or a portion of said template is amplified.

26. (Once amended) A method for sequencing a nucleic acid molecule comprising:

(a) mixing a nucleic acid molecule to be sequenced with one or more primers, one or more of the compositions of [claims 1 or 20,] claim 1 or claim 20, one or more nucleotides and one or more terminating agents to form a mixture;

(b) incubating said mixture under conditions [sufficient to synthesize] whereby a population of molecules complementary to all or a portion of said molecule to be sequenced is synthesized; and

(c) separating said population to determine the nucleotide sequence of all or a portion of said molecule to be sequenced.

27. (Once amended) A kit for use in synthesis of a nucleic acid molecule, said kit comprising one or more of the [compounds or components of claims 1 or 20.] compositions of claim 1 or claim 20.

28. (Once amended) The kit of claim 27, wherein said kit comprises at least two of said [compounds or components.] compositions.